

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions and listings of claims in the application:

Listing of Claims:

1-12 (canceled)

13. (**Currently Amended**): A method for pre-detecting responses in a secondary radar, the responses to be pre-detected including a message coded by a modulated signal, the method comprising:

~~a step of identification, during which the presence of a signal exhibiting modulation characteristics in accordance with those of a message of a response to be pre-detected is detected;~~
a step (i) of identification, during which detection is made of the presence of a modulated signal with modulation characteristics corresponding to said modulation characteristics of a message included in a response to be pre-detected,

a step (ii) of measurement during which the duration of the identified modulated signal is measured; and

a step (iii) of comparison during which the said ~~duration of the signal identified is compared to a minimum duration, the minimum duration being determined on the basis of an expected duration of the messages of the responses to be pre-detected~~ duration of the identified modulated signal is compared to a minimum duration, which is defined as being shorter than the duration of the message includes in any of the responses to be pre-detected.

14. (**Currently Amended**): ~~The method as claimed in claim 13, wherein the messages are coded by a position-modulated signal, the presence of a signal is identified when a sequence of pulses is present in which each pulse of the sequence is separated from that which precedes by at the most a duration of the order of a modulation period~~ The method as claimed in claim 13, wherein, the message being coded by the modulated signal in position, the presence of said modulated signal is identified by detecting a sequence of pulses, in which said each pulse is separated from the previous pulse by at most a duration of the order of a modulation period.

15. **(Currently Amended)**: The method as claimed in claim 14, wherein, when said modulated signal corresponding to the message is identified, generating a slot is generated whose duration at which is substantially equal to the duration between separating the first pulse from and the last pulse of the sequence of pulses, to within about a modulation period identifies the presence of a signal.

16. **(Currently Amended)**: ~~The method as claimed in claim 15, wherein the said slot is generated from, the detected pulses and from a stable signal generated on the basis of the detection for a duration equal to the maximum time until the next detection of a message pulse~~ The method as claimed in claim 15, wherein said slot is produced from the detected pulses by producing a stable signal beginning with the detection of the first pulse of the sequence and finishing with the detection of the last pulse.

17. **(Currently Amended)**: The method as claimed in claim 16, wherein the said pulses are detected by comparing the modulated signal to a threshold~~thresholding with respect to a level determined as a function of a peak level~~ of the modulated signal.

18. **(Currently Amended)**: ~~The method as claimed in claim 16, wherein the duration of the said stable signal generated on the basis of a falling edge is substantially equal to the duration of a modulation period plus 20%~~ The method as claimed in claim 16, wherein said stable signal is generated beginning with a falling edge of the pulse and has duration substantially equal to the duration of a period of modulation raised by 20%.

19. **(Currently Amended)**: The method as claimed in claim 18, ~~in which~~ wherein ~~[[the]]~~ said pulses are detected by comparing the modulated signal to a threshold ~~thresholding with respect to a level determined as a function of a peak level~~ of the modulated signal.

20. **(Currently Amended)**: The method as claimed in claim 15, ~~in which~~ wherein the duration of the identified modulated signal is ~~measured~~ determined by measuring the duration of the slot.

21. **(Currently Amended)**: The method as claimed in claim 13, ~~in which~~ wherein the responses to be pre-detected being mode S responses, the minimum duration of the messages is of the order of 56 microseconds for short responses or of the order of 112 microseconds for long responses.

22. **(Currently Amended)**: A method for detecting responses in a secondary radar, the responses to be detected including a preamble and a message, the preamble including protocol data, the message being coded by a modulated signal, the method comprising:

a step of ~~pre-detecting the responses to be detected, a response being pre-detected by identifying the message that it comprises pre-detection during which a method for pre-detecting responses according to claim 1, to pre-detect the responses to be detected is used;~~

a step of determination during which forecast position of the preamble of each pre-detected response is determined; and

a step of checking during which the presence of the determined protocol data at said forecast position of the preamble is checked[.];

wherein the step of pre-detection implements the method further comprising:

a step (i) of identification, during which detection is made of the presence of a modulated signal with modulation characteristics corresponding to said modulation characteristics of a message included in a response to be pre-detected,

a step (ii) of measurement during which the duration of the identified modulated signal is measured; and

a step (iii) of comparison during which the said duration of the identified modulated signal is compared to a minimum duration, which is defined as being shorter than the duration of the message includes in any of the responses to be pre-detected.

23. **(Currently Amended)**: The method of detection as claimed in claim 22, ~~in which~~ wherein the forecast position of the preamble is determined on the basis of the start beginning or of the end of the modulated signal identified in the pre-detection step ~~step (ii) of the method of pre-detection.~~

24. **(Currently Amended)**: The method as claimed in claim 22, ~~in which~~ wherein the responses to be detected being mode S responses, a detection is generated when at least N pulses out of four are ~~present~~ detected at the forecast position of the preamble, where N is a parameter whose value lies between 1 and 4, the limit value 1 being used to detect very scrambled responses, the limit value 4 being used to detect clear responses.

25. (**Currently Amended**): A method for detecting responses in a secondary radar, the responses to be detected comprising a message coded by a modulated signal, said method comprising:

~~a step of detection during which method of pre-detection as claimed in claim 13, to pre-detect the responses to be detected, is implemented and~~ a step of pre-detecting the responses to be detected, a response being pre-detected by identifying the message that it comprises;

~~a step of generation during which a clock signal with a binary tempo is generated at a message-based binary tempo from the message included in the response;~~

~~a step of precisely determining the position of the beginning of the response is precisely determined on the basis of the beginning or of the end of the message[.];~~

wherein the step of pre-detection implements the method further comprising:

a step (i) of identification, during which detection is made of the presence of a modulated signal with modulation characteristics corresponding to said modulation characteristics of a message included in a response to be pre-detected,

a step (ii) of measurement during which the duration of the identified modulated signal is measured; and

a step (iii) of comparison during which the said duration of the identified modulated signal is compared to a minimum duration, which is defined as being shorter than the duration of the message includes in any of the responses to be pre-detected.